FINAL UNIT PLAN AND LESSON PLAN:

Presented by: **Mark Lloyd, Eric McIntyre and Huguette Poirier**

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| Date of Delivery: | **Any** | Curriculum Areas: | **Music -Science – LA – Tech** |
| Grade Level: | **8** | Subject Areas: | **Music -Science – LA - Tech** |
| Class Size: | **30** | Unit Duration: |  |
| Curriculum Area(s) Outcomes:  **Music:** **GCO 1: Students will explore, challenge, develop, and express ideas, using the skills, language, techniques, and processes of the arts.**  **8.1.3 demonstrate an understanding of the elements of music using appropriate terminology**  **8.1.8 compare the sound and structure of major and minor scales and triads as they relate to the keyboard.** | | | |
| Cross-Curriculum Link(s):  **English Language Arts**  **GCO 8: Students will be expected to use writing, and other forms of representation to explore, clarify, and reflect on their thoughts, feelings, experiences, and learnings; and to use their imaginations**  **-8.3 begin to use various forms of note making appropriate to various purposes and situations**  **Physical science: Sound**  **Sound Vibrations**  **- relate vibrations to sound production (303-10)**  **Pitch, Loudness, and Sound Technology**  **- use the term “decibels” correctly in descriptions of sound intensity(104-6)**  **The Ear, Hearing Loss and Noise Pollution**  **- identify the positive and negative effects of technological devices that produce loud sounds and identify the need for protection from loud sounds to prevent hearing loss (108-1, 206-9)** | | | |
| Technology Outcomes:  **ISTE Standards – NETS-S** *(NETS outcomes addressed in this plan are highlighted in yellow)*  **1. Creativity and Innovation**  Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.  *a. Apply existing knowledge to generate new ideas, products, or processes*  *b. Create original works as a means of personal or group expression*  *c. Use models and simulations to explore complex systems and issues*  *d. Identify trends and forecast possibilities*  **2. Communication and Collaboration**  Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.  *a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media*  *b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats*  *c. Develop cultural understanding and global awareness by engaging with learners of other cultures*  *d. Contribute to project teams to produce original works or solve problems*  **3. Research and Information Fluency**  Students apply digital tools to gather, evaluate, and use information.  *a. Plan strategies to guide inquiry*  *b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media*  *c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks*  *d. Process data and report results*  **4. Critical Thinking, Problem Solving, and Decision Making**  Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.  *a. Identify and define authentic problems and significant questions for investigation*  *b. Plan and manage activities to develop a solution or complete a project*  *c. Collect and analyze data to identify solutions and/or make informed decisions*  *d. Use multiple processes and diverse perspectives to explore alternative solutions*  **5. Digital Citizenship**  Students understand human, cultural, and societal issues related to technology and practice legal and ethical behaviour.  *a. Advocate and practice safe, legal, and responsible use of information and technology*  *b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity*  *c. Demonstrate personal responsibility for lifelong learning*  *d. Exhibit leadership for digital citizenship*  **6. Technology Operations and Concepts**  Students demonstrate a sound understanding of technology concepts, systems, and operations.  *a. Understand and use technology systems*  *b. Select and use applications effectively and productively*  *c. Troubleshoot systems and applications*  *d. Transfer current knowledge to learning of new technologies* | | | |
| Learning Objectives:  Students will measure the “high” volumes/peaks of Haydn’s “Surprise Symphony” and contrast the high with the low volumes in the work (see music map) and share their measurements.  By the end of this unit, students will have a better understanding of:  1. Listening vs. Hearing Music  2. Measurement of Sound and other components and Hearing Safety  3. Music and Decibel Measuring  4. Good Vibrations | | | |
| Preparation:   * Survey students to find out who has mobile internet units and who have already downloaded the free app called for Android, Sound Meter by Smart Tools Co. for iPod, Decibel 10 by SkyPaw Co. Ltd * Book the ipads (if available in your school) * Pre-arrange student groupings * Have suggested links to Haydn Biography * Haydn’s Surprise Symphony No. 94, 2nd movement web link: <http://www.youtube.com/watch?v=lLjwkamp3lI> | | | |
| Resources (traditional):   * Note pad, pencils | | | |
| Resources (technical):   * mobile devices with decibel meter app * ipads or computers * a recording of Haydn’s Surprise Symphony | | | |
| Student Prior Learning (Subject Content):   * Students have learned about sound * They have knowledge of decibels, decibel measurement, hertz, and frequency * They have a basic understanding of sound and structure of major and minor scales and triads as they relate to the keyboard | | | |
| Student Prior Learning (Technical) :   * Students have previously used mobile devises or ipads * Students have previously learned to read music * Students have previously learned to recognized musical forms | | | |
| Special Considerations:   * Groups will be pre-assigned so that students with less technological knowledge are paired with technologically savvy students. * Make extra copies of the handout showing the various examples of decibel measurement. * Students with accommodations/needs * Multiple intelligences: visual, auditory, kinaesthetic, etc | | | |
| Lesson Procedure: | | | Time Allotted: |
| Introduction, APK, or Anticipatory Set:   * Discussion question: “Sound is music”, agree or disagree and why? Students should be able to explain what they think is the difference between hearing and listening. * Do a quick review of decibels and reference to the handout showing the various examples of decibel measurement. | | | 15 minutes |
| Learning Activity (The Process of Instruction):  Lesson 3 of a 4 lesson unit  The teacher will:   * Explain the activity * Verify that every group has downloaded the free app called for Android, Sound Meter by Smart Tools Co. for iPod, Decibel 10 by SkyPaw Co. Ltd. * Circulate in the classroom and take anecdotal notes and assess students as the lesson unfolds.   Students will:   * Listen to Haydn’s “Surprise Symphony” and follow along the melody line on the handout or the computer. * Listen to the symphony again and they will measure the “high” volumes/peaks of Haydn’s “Surprise Symphony” using their mobile device. Students will record their decibel measurement. . They will contrast the high with the low volumes in the work (see music map) and share their measurements. * Listen to the symphony at a louder volume. They will record their new data. * Critical Thinking: Through discussion students will then come up with ideas as to why their readings are not all the same. (Various factors could be proximity to speakers, how they held their device, other interruption of sound, sound pressure, volume setting on amplifier (after playing work twice). They will also propose possible solutions for more accurate measurement. | | |  |
| Conclusion/Closure:  Ask students if hearing damage is possible from listening to classical music. Making reference to hearing and ear safety from the previous lesson evoke a discussion about using their measurement application in different locations/experiences throughout their day – when are there times their hearing safety could be jeopardized?  Should a sound engineer at a rock concert be responsible for checking the sound decibels throughout the concert? | | | |
| Assessment of student learning:  *8.1.3 demonstrate an understanding of the elements of music using appropriate terminology*  *8.1.8 compare the sound and structure of major and minor scales and triads as they relate to the keyboard.*   * **Listening journal - students demonstrate their understanding of the elements of music. The teacher will assess the journal using a rubric** * **Data collected will be represented in the format of their choice. The teacher will assess presentations.** | | | |
| Self-evaluation of the lesson presentation/preparation:  Was there good time management?  Were the groups well balanced?  Was there evidence of collaboration? | | | |
| Self Reflection  The discussion question used in the lesson introduction was the focal point of the lesson and it also forces students into a greater cognitive process | | | |